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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/462,179	03/10/2000	NICOLANGELO PEDUTO	1022701-000854	4762

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EXAMINER	
PATTERSON, MARC A	

ART UNIT	PAPER NUMBER
1782	

NOTIFICATION DATE	DELIVERY MODE
07/27/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	09/462,179	PEDUTO ET AL.	
	Examiner	Art Unit	
	MARC A. PATTERSON	1782	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 May 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-14,16-19 and 21-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-14,16-19 and 21-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

WITHDRAWN REJECTIONS

1. The 35 U.S.C. 103(a) rejection of Claims 1 - 3, 5 - 11, 19, 21 - 25 and 27 – 29 as being unpatentable over Mugge et al (U. S. Patent No. 5,425,817) in view of Pipper et al (U.S. Patent No. 5,039,786), of record on page 2 of the previous Action, is withdrawn.

NEW REJECTIONS

Claim Rejections – 35 USC § 103(a)

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 - 3, 5 - 11, 19, 21 - 25 and 27 - 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mugge et al (U. S. Patent No. 5,425,817) in view of Pipper et al (U.S. Patent No. 5,039,786) and Campbell (U.S. Patent No. 4,212,965).

With regard to Claims 1 – 3, 11 and 29, Mugge et al disclose a tubular structure (pipe; column 1, line 66) comprising an internal and external layer (inner and outer layers; column 2, lines 3 - 5) comprising thermoplastic polyamide (column 2, lines 3 - 5) and second internal layer comprising impact modifier (column 3, lines 22 - 30) and an impact resistance modifier in the polyamide present at a weight concentration of less than 50%, comprising polyolefin (column 3, lines 24 - 27); the polyamide is a copolymer of caprolactam and mixture of hexamethylene with a diacid having 12 carbons (column 2, lines 6 - 27). Mugge et al fail to disclose a ratio of

caprolactam and mixture of hexamethylene with a diacid having 12 carbons of 4 to 9 by weight and a second internal layer comprising thermoplastic polyamide.

Pipper et al teach a copolymer of caprolactam and mixture of hexamethylene with a diacid having 12 carbons of 4 to 9 by weight (column 2, lines 29 - 36) for an article, for the purpose of making the article by injection molding or extrusion (column 4, lines 31 - 35). One of ordinary skill in the art would therefore have recognized the advantage of providing for the copolymer of Pipper et al in Mugge et al, which comprises an article, depending on the desired formation of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a ratio of caprolactam and mixture of hexamethylene with a diacid having 12 carbons of 4 to 9 by weight Mugge et al in order to make the article by injection molding or extrusion as taught by Pipper et al.

Campbell teaches a polyamide, therefore thermoplastic, that is an impact modifier, for the purpose of obtaining films having impact resistance (column 4, lines 52 – 55). It therefore would have been obvious for one of ordinary skill in the art to provide for the polyamide of Campbell in Mugge et al to provide impact resistance as taught by Campbell, therefore a second internal layer comprising thermoplastic polyamide.

With regard to Claims 5 - 9, 21 and 23 - 25, Mugge et al teaches additional layers comprising the composition of the internal and external layers (multiple layer; column 3, lines 60 - 63) and therefore teaches internal intermediate layers and external intermediates layer that are arranged alternately in the transverse direction of the structure and an intermediate layer being formed by the composition forming the internal layers.

With regard to Claims 10 and 22, Mugge et al fail to disclose a polyamide comprising a 6/6-36 copolyamide. However, Mugge et al disclose a polyamide as discussed above. It would therefore be obvious for one of ordinary skill in the art to provide for a 6/6-36 copolyamide, as 6/6-36 copolyamide is a polyamide.

With regard to Claim 19, Mugge et al disclose the use of plasticizer (column 4, line 35).

With regard to Claims 27 - 28, Mugge et al fail to disclose an external layer having a thickness of 0.1 mm and that is less than 10% of the total thickness of the structure. However, as stated above, Mugge et al discloses the selection of the layer structure, therefore thickness, depending on the requirements of use. It therefore would have been obvious for one of ordinary skill in the art, through routine optimization, to have provided for thicknesses of the layers disclosed by Mugge et al, depending on the requirements of use of the end product.

4. Claims 12 and 14 - 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mugge et al (U. S. Patent No. 5,425,817) in view of Pipper et al (U.S. Patent No. 5,039,786) and Campbell (U.S. Patent No. 4,212,965) and further in view of Princiotta et al (European Patent No. 0646627).

Mugge et al, Pipper et al and Campbell disclose a multilayer polyamide tube comprising an impact modifier as discussed above. With regard to Claims 12 and 14 - 18, Mugge et al, Pipper et al and Campbell fail to disclose an impact modifier which has a glass transition temperature below 0 degrees Celsius, and comprises acid as a functional group, and has a modulus of less than 1500 MPa and a melt flow index of between 0.1 and 7 g/10 min measured at 190 degrees Celsius under a load of 2.16 kg and is an ultra low density polyethylene.

Princiotta et al. teach an acid - modified ultra low density polyethylene which has a glass transition temperature below 0 degrees Celsius, and comprises acid as a functional group, and has a modulus of less than 200 MPa and a melt flow index of between 0.1 and 7 g/10 min measured at 190 degrees Celsius under a load of 2.16 kg which is used as an impact modifier of polyamide (page 2, lines 31 - 58) for the purpose of manufacturing a tube usable below a temperature of 40 degrees Celsius (page 2, lines 41 - 46). One of ordinary skill in the art would therefore have recognized the advantage of providing for the impact modifier of Princiotta et al in Mugge et al, Pipper et al and Campbell, which is a polyamide, depending on the desired usability at low temperature of the end product as taught by Princiotta et al.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for an acid - modified ultra low density polyethylene which has a glass transition temperature below 0 degrees Celsius, and comprises acid as a functional group, and has a modulus of less than 200 MPa and a melt flow index of between 0.1 and 7 g/10 min measured at 190 degrees Celsius under a load of 2.16 kg in Mugge et al, Pipper et al and Campbell in order to obtain a tube usable below a temperature of 40 degrees Celsius as taught by Princiotta et al.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mugge et al (U. S. Patent No. 5,425,817) in view of Pipper et al (U.S. Patent No. 5,039,786) and Campbell (U.S. Patent No. 4,212,965) and further in view of VanBuskirk et al (U.S. Patent No. 5,357,030).

Mugge et al, Pipper et al and Campbell disclose a three - layered tube comprising a polyamide 6 layer as discussed above. Mugge et al, Pipper et al and Campbell fail to disclose a

polyamide 6 layer which comprises a chain extender which is present at a concentration of 0.05% and 5% by weight of the layer.

VanBuskirk et al teach the addition of a chain extender to polyamide 6 for the purpose of improving the physical characteristics of the polyamide 6 (column 1, lines 38 - 59; column 2, lines 58 - 68). One of ordinary skill in the art would therefore have recognized the advantage of providing for the chain extender of VanBuskirk et al in Mugge et al, Pipper et al and Campbell, which is comprises polyamide 6, depending on the desired physical characteristics of the end product as taught by VanBuskirk et al.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for the addition of a chain extender to polyamide 6 in Mugge et al, Pipper et al and Campbell in order to improve the physical characteristics of the polyamide 6 in the making of extruded products as taught by VanBuskirk et al.

6. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over 35 U.S.C. 103(a) as being unpatentable over Mugge et al (U. S. Patent No. 5,425,817) in view of Pipper et al (U.S. Patent No. 5,039,786) and Campbell (U.S. Patent No. 4,212,965) and further in view of Kitami et al (U.S. Patent No. 4,881,576).

Mugge et al, Pipper et al and Campbell discloses a structure for automobile components comprising polyamide as discussed above. Mugge et al, Pipper et al and Campbell fail to disclose a polyamide having a stress cracking resistance of greater than 500 hours as measured in zinc chloride.

Kitami et al teaches a gasoline hose (therefore an automobile component; column 1, lines 11 - 15) having a stress cracking resistance of greater than 500 hours (30 days; Table 1) as measured in zinc chloride (column 3, lines 30 - 34) for the purpose of obtaining a structure having excellent mechanical strength (column 1, lines 40 - 41). One of ordinary skill in the art would therefore have recognized the advantage of providing for the stress cracking resistance of Kitami et al in Mugge et al, Pipper et al and Campbell, which comprises a structure for an automobile component, depending on the desired mechanical strength of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a stress cracking resistance of greater than 500 hours as measured in zinc chloride in Mugge et al, Pipper et al and Campbell in order to obtain a structure having improved fuel resistance as taught by Kitami et al.

ANSWERS TO APPLICANT'S ARGUMENTS

7. Applicant's arguments regarding the rejections of the previous Action have been carefully considered but have not been found to be persuasive for the reasons set forth below.

Applicant argues, on page 9 of the remarks dated May 3, 2010, that Mugge et al only disclose the use of impact modifier in any of the disclosed materials, without specific recognition of the use of the impact modifier in the formation of an internal layer.

However, because Mugge et al disclose the use of impact modifier in any of the disclosed materials, use of the impact modifier in the formation of an internal layer is disclosed.

Applicant also argues, on page 10, that the claimed polyamide is not disclosed in an external layer by Mugge et al and Pipper et al.

However, as stated above, Mugge et al and Pipper et al teach the claimed polyamide in any of the disclosed layers.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc A Patterson whose telephone number is 571-272-1497. The examiner can normally be reached on Mon - Fri 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Marc A Patterson/
Primary Examiner, Art Unit 1782